A niacin ester rapidly partitions from a skin cream or lotion into the surface layer of skin The niacin ester partitions at the desired rate from the surface layer into the epidermis

The niacin ester is bioconverted to niacin by enzymes present in the epidermis

Niacin is delivered to blood capillary cells

Niacin causes sustained dilation of the capillaries that results in an increased supply of oxygen in the dermis where it supports energy metabolism of dermal fibroblasts

The increased oxygen in the dermis diffuses into the epidermis where it supports energy metabolism in epidermal keratinocytes



Stratum Corneum (Dead Cells, Lipid Rich)

Epidermis (Live Dividing Cells)

Dermis

(Cells and Non-cellular Matrix Protein Fibers Such as Collagen and Elastin) **Blood Capillaries** (route to general circulation)

FIG. 1

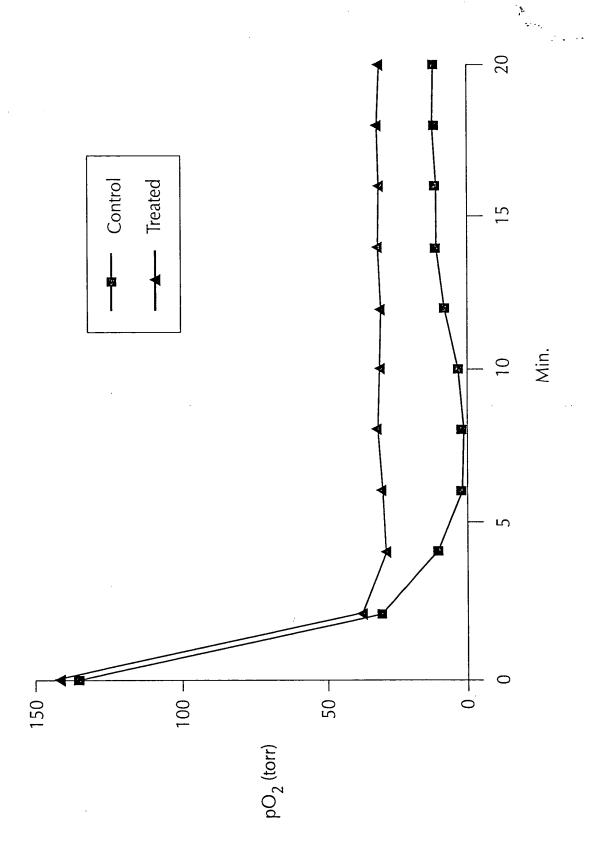


FIG. 2

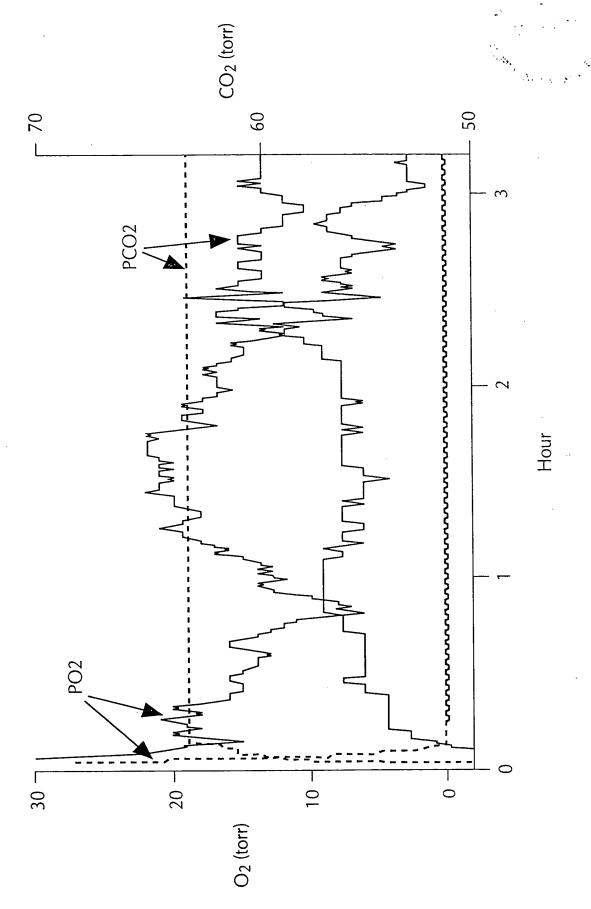


FIG. 3

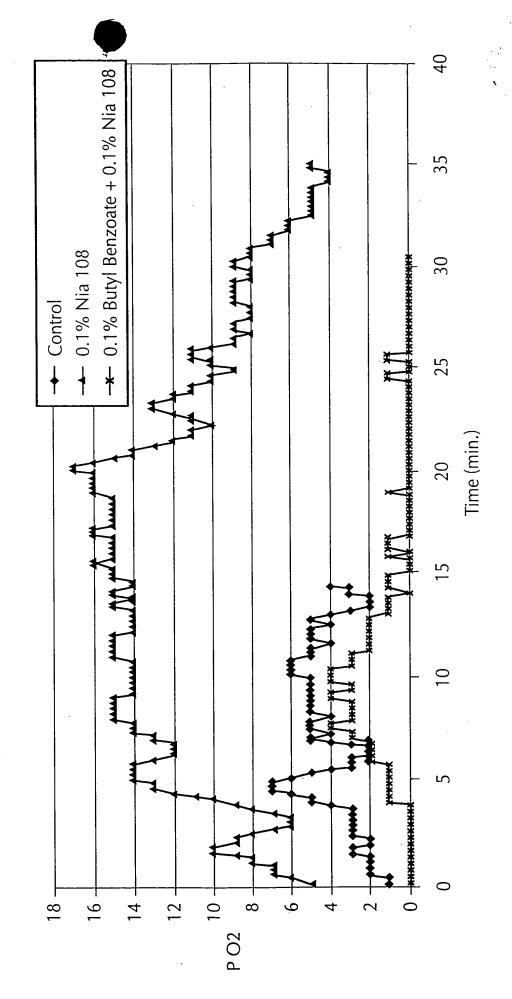


FIG. 4